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ABSTRACT

The theoretical framework and cross-cultural validation of Tell-Me-A-Story (TEMAS), a projective test developed to measure personality development in ethnic minority children, is presented. The TEMAS test consists of 23 chromatic pictures which incorporate the following characteristics: (1) representation of antithetical concepts which the examinee must resolve in telling a story about the pictures; (2) structure and reduced ambiguity in order to pull specific, underlying personality functions; and (3) ethnic and contemporary stimuli to elicit diagnostically significant stories. The TEMAS test has been standardized with Hispanic children (grades K-6) in New York and Puerto Rico, and is in the process of being standardized with Black and White children in the United States. Preliminary studies of the New York population indicated that Hispanic and Black children were more verbally fluent on the TEMAS than the Thematic Apperception Test, and that TEMAS pictures evoked stable themes over a four-month interval. Other studies established internal consistency and interclinician reliability in rating TEMAS protocols. Evidence of concurrent validity was established, as well as the utility of TEMAS in predicting therapeutic outcomes in a therapy project. Discriminant validity was based on TEMAS profiles, which discriminated significantly between clinical and nonclinical samples of Hispanic and Black children. (Author/PN)

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CROSS-CULTURAL VALIDATION OF TEMAS, A MINORITY PROJECTIVE TEST *

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ABSTRACT

Clinicians and researchers alike have argued that projective test provide a more comprehensive and meaningful assessment of personality functioning than "paper and pencil" inventories. Mental health clinical services research has stressed the urgency of developing new psychometric techniques for valid psychological assessment and psychodiagnosis of ethnic, racial and linguistic minority children in the United States. This paper presents the theoretical framework and the cross-cultural validation of TEMAS (Tell-Me-A-Story), a new projective test to measure personality development in ethnic minority children. The TEMAS test consists of 23 chromatic pictures which incorporate the following characteristics: representation of antithetical concepts which the examinee must resolve in telling a story about the pictures, structure and reduced ambiguity in order to pull specific, underlying personality functions, ethnic and contemporary stimuli to elicit diagnostically significant stories. The development of personality is measured in terms of psychological constructs such as: delay of gratification, achievement motivation, reality testing, and self-identity. The TEMAS test has been standardized with Hispanic children (grades K-6) in New York and Puerto Rico, and is in the process of being standardized with black and white children in the United States. Preliminary studies of the New York Population indicated that Hispanic and black children were more verbally fluent on the TEMAS than the TAT, and that TEMAS pictures evoked stable themes over a four-month interval. Other studies established internal consistency and inter-clinician reliability in rating TEMAS protocols. Evidence of concurrent validity was established, as well as the utility of TEMAS in predicting therapeutic outcomes in a therapy project. Discriminant validity was based on TEMAS profiles, which discriminated significantly between clinical and nonclinical samples of Hispanic and black children.

INTRODUCTION

Numerous clinicians and researchers alike have argued that projective techniques provide a more comprehensive and clinically meaningful assessment of personality functioning than "paper and pencil" test (e.g., Rapport, 1942), and also obviate attendant problems with cross-validations of personality inventories for cross-cultural research (Padilla, 1979, 1979; 1980). Traditionally, projective tests have fared well in clinical settings, but have presented a host of problems with respect to psychometric rigor (Murstein, 1963). In recent years, however, there has been a resurgence of interest in developing clinically useful and psychometrically acceptable projective techniques (Exner, 1978; Holtzman, Thorpe, Swartz, Herron, 1961; Sobel, 1981).

A prominent issue of widespread debate in the United States is the validity of evaluating ethnic minorities with instruments that have been standardized on White, middle-class norm groups (Olmedo, 1981; Padilla, 1979). Quite recently, this issue has been pursued in litigation questioning the "differential" validity of traditional standardized tests for diverse ethnic groups (e.g., Larry P. vs Riles, 1979; Diana vs. Board of Education, 1973), and in psychometric research comparing the internal factor structure of such tests among Hispanic, black and white children (Gutkin & Reynolds, 1981a, b). While some attempts have been made to develop minority-oriented cognitive and personality tests for blacks (Thompson, 1949; Williams, 1977), as well as Hispanics (Ortiz & Ball, 1977; Struthers & DeAvila, 1977), unfortunately such tests have not weathered critical psychometric scrutiny (Oakland, 1977).

A decade ago, Padilla and Ruiz (1973) reported that very little research had focused on the psychological assessment of Hispanics, in particular with projective techniques, and neglect of this research topic persists today (Rogler et al., 1983). The use of traditional thematic apperception tests, such as the TAT and CAT, has led to the evaluation of both Hispanic and black

children as less verbally fluent and more psychopathological than their nonminority counterparts (Ames & August, 1966; Booth, 1966). Yet these assessment practices are ubiquitous despite acknowledgement that the validity of projective techniques can be impugned with verbally inarticulate examinees (Anderson & Anderson, 1955). Hence there is a compelling need to develop psychological tests for reliable and valid diagnosis and personality assessment of ethnic, racial and linguistic minority children (Padilla, 1979).

THEORETICAL FRAMEWORK

Based upon these considerations, the TEMAS thematic apperception test was developed with structured, familiar and culturally relevant stimuli. TEMAS test, which consists of 23 chromatic-pictures depicting minority characters in urban setting, embodies the following features:

1) use of structured stimuli and diminished ambiguity to pull for specific, covert behaviors and internal dialogues; 2) use of chromatically attractive, ethnically relevant and contemporary stimuli to elicit diagnostically meaningful stories; 3) representation of both negative and positive intrapersonal and interpersonal functions in the form of conflicts or dilenmas which require a resolution; 4) interaction of cognitive, affective, and intrapersonal functions; and 5) use of an objective scoring system in analyzing TEMAS stories, which assesses both the structure and content of the stories (Costantino, 1978).

The theoretical framework and underlying the construction of TEMAS test is based generically in the traditional egopsychological theory as represented in Bellak (1971), theoretical reconsideration of the original Thematic Apperception Test (Murray, 1943), and in the dynamic Motivational Psychology proposed initially by McClelland and Atkinson (1953), and more recently articulated by Atkinson (1981). Accordingly, personality structure is concieved within this framework as a

constellation of latent motives or ego functions which are defined as internalized dispositions that interact with environmental stumuli to determine overt behavior in specific situations (1957). Since these dispositions are not directly accessible to clinical inquiry, projective techniques prove to be useful tools for probing beneath the surface structure or "phenotype" of personality, thereby arousing the latent motives embedded in the personality "genotype." (1981) Access to the genotypic structure of personality is accomplished by projective test stimuli that provoke imaginative or fantasy processes in telling stories about the stimuli. Therefore, motivational theorists maintain that projective tests assess relatively stable individual differences in the strength of underlying motives, which are behaviorally expressed in thematic content, and also reveal individual differences in the antecedent developmental histories of examinees. Based upon this reasoning, Atkinson (1981) contends that the analysis of thematic content has a "more solid theoretical foundation than ever before and must... be considered the most promising and virtually untapped resource for future study of personality." Given this theoretical rationale for the thematic apperception technique in studying personality, TEMAS was developed in response to the concerns, raised earlier, about assessment of ethnic and linguistic minority children. Consequently, the traditional TAT was modified in TEMAS by presenting ethnically pluralistic characters in familiar settings, while engaging in antithetical situations representing common problematic circumstances in urban life (Costantino, 1978). Thus TEMAS is an attempt to increase the ethnocultural relevance of projective stimuli to minority children, and to present familiar scenes associated with life experiences in inner-city settings. The rationale for these and other departures (e.g., reduced ambiguity, chromaticity) from traditional thematic apperception technique is based on empirical research conducted with the TAT, and is summarized below.

Developmental and learning theorists (Bandura, 1977; Piaget, 1962; 1971) have suggested that personality functions are acquired through modeling, and then psychologically instantiated through verbal and imaginal processes. Hence, advocates of projective techniques conclude that since personality functions are acquired within a given a sociocultural context, they are readily transferred to the testing situation and projected into thematic content when the stimuli are similar to the circumstances in which these functions were originally learned (Auld, 1954). The presentation of culturally relevant and familiar stimuli in projective tests was explored on by Thompson (1949) who developed a black TAT based upon the assumption that similarity between the stimulus and the examinee promotes identification with the characters in the pictures, and, therefore, provokes greater verbal fluency and self-disclosure. Traditionally, projective techniques have embraced the psychodynamic notion that ambiguous stimuli bypass the examinee's ego defenses, thereby allowing latent psychological conflict to be more freely expressed (Murstein, 1963). However TEMAS was conceived following more recent thinking that diminished ambiquity and increased structure in projective stimuli facilitate verbal fluency and yield a more focused understanding of the examinee's personality functioning (Epstein, 1966). That is, when projective stimuli are strutured to "pull" specific personality functions (unlike ambiguous stimuli), the diagnostician may achieve a more reliable and valid clinical interpretation of thematic content.

Both clinicians and researchers alike acknowledge that color has strong impact on the perception of Rorschach cards, (Murstein, 1963) and that integration of color and from is considered a sign of emotional growth and cognitive organization (Siipola, 1950) During the 1950's several studies documented that chromatic TAT pictures more accurately discriminated between clinical and control subjects than achromatic pictures and also enhanced verbal fluency (Backbill, 1951; Thompson and Backrach, 1951) Murstein (1963) explained that color facilitates differentiation between thematic responses of psychiatric and normal examinees, apparently since achromaticity reinforces sadness as an affective response to

TAT pictures. Thus, based upon this evidence, TEMAS pictures were developed in life-like color.

The representation of psychological conflict in TEMAS pictures was based on the methodology of Kohlberg, (1976) who suggested that moral judgment develops only when the child is able to understand reversible operations which are antithetical in nature. Hence, Kohlberg developed a series of stories portraying anthithetical moral dilemmas in order to assess the moral development of children. Similarly, TEMAS pictures portray a split scence showing psychological dilemmas which require a resolution, like Kohlberg's moral dilemmas, TEMAS examinees must resolve the antithetical situations portrayed in the split pictures; and the examining clinician evaluates the adaptiveness of their resolution of the conflict. The antithetical situation depicted in TEMAS pictures were designed to evoke disclosure of specific personality functions which are prominent in personality theory and also are key diagnostic indices of psychopathology: Interpersonal relations, aggression, anxiety/depression, achievement motivation, delay of gratification, self concept of competence, self/sexual identity, moral judgment, and reality testing (Bellak, Hurvich and Gediman, 1973).

An initial set of TEMAS pictures was drawn by a professional artist, who worked closely with the test author (Costantino. 1978) in an attempt to pictorially represent the psychosocial situation described to him. In some situations characters were shown engaging in internal dialogues, such as a child in front of a piggybank with coin in hand imagining buying an ice cream cone immediately, or saving money to buy a bicycle in the future. This picture represent ambivalence associated with ability to delay gratification (Mischel,1966). Other pictures, such as 9B and 9G (see Table 1,) are pictorial representations of the poem by Robert Frost, "The Road Not Taken." These pictures depict a boy or girl at a crossroad in a forest undecided to take the road already taken by his or her peers, or to take the road which no one has taken (evoking interpersonal relationships and anxiety feelings). A brief description of the final set of 23 pictures resulting from pilot

studies is presented in Table 1, which also denotes the personality functions pulled by each picture. As Table 1 illustrates, the TEMAS pictures embody a wide variety of problematic life situation and experiences in inner-city, impoverished environments. Table 1 descriptions include intrafamilial scenes within the home, solitary dream-like and fantasy states, street scenes involving peers and adults, sports activities, and situations occurring in school settings. The antithetical situations portrayed in the pictures accommodate a balance of positive or negative feelings to be projected into thematic content, manifested behaviorally in either adaptive or maladaptive resolutions of the dilemmas presented, These topics are structured to pull themes expressive of varying degrees of psychopathology ranging from severe pathology (e.g., morbidity, suicide, depression, gender confusion, impulsivity, isolation, delusion) to lack of pathology. Some examples of underlying motives revealed in thematic content which vary in level of expressed psychopathology are provided in the following description of scoring procedures.

Table 1

Picture No.	Description
1B/G*	A mother is giving a command to her son/daughter, while the father is in the background. Peers are urging the boy/girl to play basketball/jump rope with them. (IP, DG)
2.	A father is watching television and drinking. A son and daughter are standing behind him. The mother is carrying her infant and vacumming, while two additional daughters and a son are by the mother side (IP, DG)
3.	A father is telling his son who wants to watch T.V. to do his homework. Three siblings are watching television. (IP, AM, DG).
4.	An angry father is threatening the mother while a young woman lies in bed with her face covered. Two boys and girls are clinging to the mother. (IP, AGG, ANX, MJ)
5.	An adolescent is sleeping in bed and dreaming of a picnic with a female, or of a dark figure entering a bedroom at night. (IP, AGG)
6.	A boy and a girl dress up in adult clothes in the attic, while they look nostalgically at a cradle and some baby toys. (IP, SI)

Table 1 (cont.)

Picture No.	Description
7*	Angry mother is watching her son and daughter arguing over a broken lamp. (IP, AGG, MJ)
8	A male teacher is with a group of attentive student A female teacher/principal shows a mother and a father a broken window with a boy and girl, behind the parent. (IP, AGG, AM, MJ)
9B/G.	A boy/girl with outstretched arms is standing at the junction of two roads in the forest. Friends call to him/her to join them walking on the right-hand road. A lonely road is on the left. (IP, ANX)
10B/G*	A boy/girl is holding money standing in front of a piggybank, imagining him/herself looking at a bicycle in a shop window or buying an ice cream cone. (DG)
11.	A mother is carrying a bag of groceries with her son and daughter helping her. A woman is trying to protect herself from two boys and a girl who are stealing groceries from her bag. (IP, AGG, MJ)
12B/G.	A group of boys/girls are cooperating in the repair of a bicycle. A group of boys/girls are fighting (IP, AGG)
13B/G.	A boy/girl is standing in front of a bathroom mirror imagining the reflection of his/her parents in the mirror. (IP, SCC, SI)
*14B/G	A boy/girl is studying in his/her room. A group of boys and grils are listening to music in the living room. (IP, AM, DG)
*15	A policeman is giving an award to a group of PAL baseball player. A policeman is arresting a group of boys and girl who broke a window and stole merchandise. (IP, AGG, AM, MJ)
16.	A boy is climbing up a rope in a gym and girls are jumping over a wooden horse. A group of two and two girls on one side of the picture are expressing encouragement and admiration. A group of two boys and two girls on the other side of the picture are expressing fearfulness. (IP, AM, SCC)

Table 1 (cont.)

Picture No.	Description
17B	A boy/girl is studying and daydreaming about him/herself receiving an "A" or "F" from the teacher. (ANS, AM, SCC)
18B/G.	A boy/girl studying and daydreaming about becoming an actor, a doctor, or a drunk/bag lady. (AM, SCC)
19B/G.	A boy/girl is in a window imagining him/herself being saved from a building in flames by a fireman or by Superman/Wonder Woman. (ANX, RT)
*20	An adolescent in bed is dreaming of a scene showing a horse trapped on a hill over a river, or a path leading to a castle. (ANX)
*21	An adolescent in bed is dreaming of a friendly monster eating something or of a monster making threats. (AGG, ANX, RT)
*22B/G.	A boy/girls is standing in front of a bathroom mirror, imagining his/her face reflected in the mirror with attributes of both sexes.
23B/G.	A boy/girl is rejected by his/her parents, and imagines running away from home and living alone, or standing on a bridge thinking of committing suicide. (IP, ANX)

Note: (*) Denotes a card belonging to the short form. The designations and "B" and "G" refer to sex-specific cards (for boys and girls, respectively. Personality functions pulled by each picture are coded parenthetically as follows: interpersonal relations (IP), aggression (AGG), anxiety/depression (ANX), achievement motivation (AM), delay of gratification (DG), self concept of competence (SCC), sexual identity (SI), moral judgment (MJ), reality testing (RT)

ADMINISTRATION AND SCORING

After establishing rapport with the examinee, the examiner introduces the test with the following instructions: "I have several, interesting pictures that I am going to show you, look at the persons and places in the pictures and tell me a complete story

about each picture, one that has a beginning and an end. The story should answer three questions: "What is happening in the picture now? What happened before? What will happen in the future?" Following presentation of a picture, the examiner records the examinee's verbal reaction time, the spontaneous time and then the total storytelling time. The minimum time for a story is two minutes, and the maximum time for a story is five minutes.

Inquiries are conducted to elicit the identity and interrelationships of the characters, identification of settings, and the affective state of the main character. If this information is omitted, the examinee should be given the opportunity to tell a complete story in a spontaneous manner (i.e., without prompting). A story is complete if it relates: (1) the identities and relationships of the characters, the setting, and what the characters are doing; (2) what the characters did before; (3) what the characters will be doing in the future; and (4) what the main character is thinking and feeling upon resolution of the antithetical situation.

Stories are recorded verbatim by the examiner. If an examinee is given the TEMAS short form, administration of the 9 pictures should be completed within 45 minutes in one session, generally without interruption. The full 23 pictures are administered either in two one-hour sessions, or in one session with a break after one hour.

Personality functions are scored on a Likert-type, four-point scale as follows. A score of "1" indicates the presence of a highly maladaptive resolution of conflict. For example, themes of murder rape and assault are always scored "1" for interpersonal relations, aggression and moral judgment. A suicidal theme earns a "1" under the anxiety/depression function. The decision to drop out of school or steal rather than work results in a "1" for achievement motivation and delay of gratification. The anticipation of complete failure and concomitant refusal to attempt a give task results in a "1" for self concept of competence. A character who changes sexes or rejects his or her gender earns a "1" in sexual identity. Scores of "1" in moral judgment reflect a total lack of regard for the consequences of antisocial behavior. Severely impaired reality testing would be scored only for the most bizarre and impossible

resolutions (e.g., inanimate objects come alive and kill; a child causes harmful events to occur by a strange power of the mind). A score of "2" for any personality function reflects a moderately maladaptive resolution. For example, children cheat and get away with it; a conflict is resolved by fighting; money is squandered rather than saved; homework is avoided in favor of play; a child runs away from home and never returns; the monster in a dream could also be in the backyard. A score of "3" represents a partially adaptive resolution. Here, for example, the children who cheat are caught and punished; fighting ceases in favor of compromise; money is saved for a time and then spend; homework is grudgingly completed; a runway child returns home; the monster does not come to life as feared. A score of "4" represents a highly adaptive resolution. The child must perceive the intended conflict and solve the problem in a mature, viable manner. There is implicit in a score of "4", a striving for the greater good, sense of responsibility and an intrinsic motivation. Here for example, a child rejects the notion of cheating as contrary to learning; conflicts are discussed and compromises reached; money is saved for the future; homework is completed because good grades are valued; a child decides to talk to parents rather than run away; dreams are never real.

In addition to personality functioning, TEMAS is also scored for a number of descriptive indices: number of unanswered inquiries, reaction time (sec), spontaneous and total storytelling time (min), and verbal fluency (word count). Perceptual style is scored for fragmentation, elaboration, omission, and transformation of perceptual details. Fragmented responses are such that the subject's primary focus is on an isolated part of picture (e.g., main character's arm), as opposed to a holistic focus. Elaboration refers to whether stories tend to be restricted in context in a perseverative theme. Omissions and transformations of perceptual detail in the pictures is scored when the details are related to the identity of perceptual of main and secondary characters, event and setting. Affective functioning is scored with respect to the emotional state attributed to the main character at the end of the story after resolution of the conflict. The main character's affect is recorded as happy,

sad, angry, fearful, neutral and/or ambivalent. In addition, the congruence of this affective state with the content of the story is noted. Descriptive indices are tabulated by summing frequency of occurrence across pictures.

PRELIMINARY STUDIES

A pilot study was conducted with a group of eight children ranging in age from 6 to 12. Each child was asked to tell a story about each picture, responding to the questions: What is happening? Who are these characters? Are they related? What are they saying? Where are these people? Children were retested after a four-month interval to establish test-retest-reliability. Only those pictures which reached a .80 inter-child agreement and .90 test-retest stability on all five questions were retained. A revised set of cards were developed, resulting in a reduction to 23 pictures, 12 for both sexes and 11 sex-specific.

The TEMAS pictures were structured to pull nine specific personality functions (which are related on a 4-point scale) based upon the nature of psychological conflict confronting the main character of the pictures: interpersonal relations, aggression, anxiety and depression, achievement motivation, delay of gratification, self concept of competence, sexual identity, moral judgment and reality testing. Accordingly, a study was conducted to assess the concordance among a sample of 14 practicing school and clinical psychologists, recruited from community mental health centers and public schools in New York City. Psychologists averaged nearly 8 years experience in testing and counseling minorities and 9 year experience in administering projective techniques. With respect to ethnicity, seven were white, one black and six were Hispanic. Clinical orientation of the psychologist include eclectic, analytic/dynamic, ego, and system. The psychologist were presented the TEMAS pictures and asked independently to indicate which,

if any, of the nine personality functions intended by the author of TEMAS in constructing the pictures were pulled by each picture. They also were given the liberty of suggesting pulls other than the nine listed by the author. Results indicated substantial concordance among clinicians regarding the pulls of TEMAS pictures, ranging from 71-100% agreement. These results, then served to define and corroborate the specific personality functions to be scored with each picture.

Since verbal fluency is the sine qua non of validity with projective techniques (Anderson and Anderson, 1955), two preliminary studies were conducted to compare minority examinees' articulateness on TEMAS versus the TAT. In the first study, Costantino, Malgady, and Vazquez (1981) administered six TAT and minority TEMAS pictures to fourth and fifth grade Hispanic children. Results of this study indicated that Hispanic children were significantly more verbally responsive to TEMAS pictures than TAT pictures, and this effect was more enhanced for females than males. Consequently, a similar study was conducted (Costantino and Malgady, 1983) with a larger number of TEMAS and TAT pictures to enhance internal consistency realiability of the data, broadening the age range of subjects (grades K-6), comparing both Hispanics and blacks to a white examinee group. The results of this second study corroborated the sex differences in verbal fluency reported by Costantino, Malgady, and Vazquez (1981), and also showed that Hispanics and blacks were more verbally fluent on TEMAS compared to the TAT. Thus, these findings contradict the notion that minorities are deficit in verbal fluency on projective tests, and also provide a cornerstone for the potential validity of TEMAS.

PSYCHOMETRIC PROPERTIES OF TEMAS

Previous research established an objective consensus for for scoring TEMAS protocols, temporal stability of thematic content, and that minority examinees are more articulate on TEMAS relative to the TAT. The next study investigated the reliability of scoring TEMAS pictures and potential difference as a function of sex, age and SES. The subjects were 73 Puerto Rican students attending grades K-6 in public schools in New York City. The mean age of the subjects was 9.19 years. With respect to the occupational scale of Hollingshead's Index of Social Position, subjects were from low to lower-middle class families. According to teacher and parental reports, subjects were not undergoing psychotherapy for personality disturbance, nor presenting significant behavioral problems in school. TEMAS was administered to subjects with the 23 pictures presented in random order by bilingual Hispanic examiner. All subjects were tested individually by graduate psychology students in two testing sessions conducted in the public schools. Hispanic subjects were tested in their dominant language. Subjects subsequently responded by telling a story about each picture for typically two to four minutes, which was recorded verbatim by the examiner. In the case of subjects who responded in Spanish, after being recorded in Spanish, stories were translated into English. All tests were scored by bilingual graduate psychology interns, who were blinded to subjects' demographic background.

Internal consistency reliability of TEMAS indices was estimated by computing coefficient alpha. Reliability of personality fuctioning indices was computed only on particular pictures intended to "pull" specific functions. Pictures pulling interpersonal relations, aggression, and moral judgment were highly internally consistent (.72 - .92), whereas anxiety/depression achievement motivation, delay of gratification, self-concept of competence, sexual identity, and reality testing evidence much lower reliabilities (.45 - 65). In part, reliability of the latter functions may be attributed to attenuation by "test length";

that is, scores are based on relatively few (3 - 8) TEMAS pictures. Interrater reliability in scoring TEMAS protocols was investigated by comparing two independent raters' evaluation of a randomly selected sample of 27 subjects. Examinees' protocols were rated twice and the two scroes were correlated for each picture. Correlations were low to moderate for reality testing (r = .32 - 60), sexyak udebtity (r = .32 - .36), and achievement motivation (r = .20 - .65), and substantially higher for the remaining functions (median rs = .50 - .68). TEMAS indices were correlated with subjects' age sex (dummy coded 1 = female, 0 = male), and socioeconomic status (SES). By and large, the patterns of correlations observed suggest that TEMAS scores are virtually independent of age, although statistically significant (p = .05), but low negative correlations exist between age and aggression (-.26), and sexual identity (-.34). All correlations with sex were negligible. Finally, SES had no significant influence on TEMAS scores, possibility due to its restricted range.

A follow-up study was conducted with sample of examinees screened for presenting severe behavioral problems in school, prior to their referral for psychotherapeutic treatment. This study sought to gather evidence of validity, both concurrently and predicting psychotherapeutic treatment outcomes. The subjects in this study were recruited from grades K-3 in New York City public schools. Of nearly 900 students screened by teacher rating, 210 (120 male, 90 female) falling below the median rating were solicited for participation in the study, and for subsequent referral to participate in a comparative study of psychotherapeutic treatment modalities (Costantino, 1979). Subjects' families were from low to lower-middle class, based on the occupational scale of Hollingshead's Index. Subjects were administered TEMAS pictures as in the prior study. In order to determine the relationship of TEMAS personality assessment to intellectual functioning, subjects were also administered three subtests of the WISC-R (in Spanish, Escala De Inteligencia Para Niños): Vocabulary, Comprehension, and Similarities. For the purpose of establishing

concurrent validity, subjects were administered four criterion tests, and their adaptive behavior in experimental role-playing situations was observed and rated by examiners.

Each TEMAS index was correlated with subjects' sex (0 = male, 1 = female); age, and WISC IQ (vocabulary, comprehension and similarities subtests). There were no significant sex nor IQ effects on TEMAS indices, but age effects were low to moderate (r_s = .16 to .37). Results of multiple regression analyses indicated that TEMAS profiles significantly (P .05) predicted ego development (sentence completion test) (R = .39), mothers' behavior ratings (R = .38), and teachers' behavior rating (R = .49); and observations of delay of gratification (R = .32), self concept of competence (R = .50), disruptive behavior (R = .51), disruptive behavior (R = .51), and aggressive behavior (R = .32). However, there was no significant multiple correlation with respect to trait anxiety. Thus, multiple regression coefficients ranged from .32 to .51, providing moderate evidence of concurrent validity for TEMAS profiles with respect to these selected criterion variables.

In an effort to evaluate the utility of TEMAS profiles for predicting psychotherapeutic treatment outcomes, a random sample of 198 subjects were randomly assigned to three therapeutic interventions (Costantino, 1979). Criterion tests and role-playing situations were administered again after 20 weekly treatment sessions. Hierarchical multiple regression analysis was used to test the utility of TEMAS profiles in predicting post-therapy scores on the criterion measures, independent of pre-therapy scores

Multiple regression coefficients for prediction of criterion measures and observation ratings were statistically significant (p .05) and high with respect to ego development (R = .69), trait anxiety (R = .64), mothers' and teachers' behavior rating (R = .65 - .71), delay of gratification (R = .67), disruptiveness (R = .57), and aggression (R = .63). Self concept of competence was not significantly related to TEMAS. Further, TEMAS profiles appear to provide extremely useful pre-therapeutic information,

in the sense that 6-22% of the variance in post-therapy outcomes was predictable from TEMAS pretest, independent of criterion pretests. Thus, this analysis lends support for the clinical utility of TEMAS as a tool for evaluation of psychotherapeutic outcomes (Malgady, Costantino, and Rogler, 1984).

Discriminant analyses were conducted with Hispanic (N = 138) and Black (N = 73) outpatients at psychiatric facilities and children in public schools in New York City. Results indicated that TEMAS profiles significantly discriminated the two groups, within both the Hispanic and Black samples. Preceptual/cognitive indices reclassified the two groups with 92% accuracy for Hispanics and 98% accuracy for Blacks. Affective indices lead to 78% accuracy of classification for Hispanics and 83% for Blacks. Personality profiles discriminated the two groups with 89% accuracy for Hispanics and 91% accuracy for Blacks. Within the clinical sample, the TEMAS indices did not discriminant significantly between different DSM-III classifications of disorders of childhood and adolescence.

A study currently in progress was conducted to standardize and validate TEMAS with 280 public and private school children, grades kindergarten through six, in San Juan, Puerto Rico. Children were administered TEMAS on two occasions (separated by a two-month interval), and three criterion measures for the purpose of establishing concurrent validity (Spielberger's State-Trait Anxiety Scale; Piers-Harris Self Concept Scale; NIMH Center for Epidemiological Studies -- Depression Scale). In addition the TEMAS was administered to 50 psychiatric outpatients, from the University of Puerto Rico Medical Center, diagnosed according to DSMIII as experiencing conduct, anxiety or adjustment disorder of childhood and adolescence. Construct validity will be established by attempting to discriminate between the psychiatric outpatients and a comparable sample of nonpsychiatric elementary school children.

Current research has proven that TEMAS is a valid projective test not only for Hispanic children, but also for black and white children. (We have developed TEMAS Form A with Hispanic and black

characters and TEMAS Form B with white characters). We are in the process of standardizing TEMAS with black and white children in the United States. Furthermore, TEMAS studies are being conducted in Spain and Argentina.

DISCUSSION

Clinical services research has been organized (Rogler et al., 1983) according to a temporally ordered barrier model of impediments to effective mental health care of Hispanics: 1) inadequate psychiatric epidemiology of mental health needs; 2) underutilization of mental health resources; 3) ethnic bias in traditional psychodiagnostic and assessment techniques; 4) ineffectiveness of traditional psychotherapeutic treatment modalities; and 5) absence of programmatic research on post-therpeutic treatment follow-up services facilitating community and vocational adjustment. Overcoming ethnic bias allegedly associated with psychometric technology clearly adumbrates questions related in valid psychodiagnosis, accurate psychiatric epidemiology of prevalence or utilization rates, and effectiveness of psychotherapeutic treatment and follow-up services (Costantino and Malgady, 1983; Oakland, 1973; Padilla 1979; Olmedo, 1981). This suggests that the solution to Rogler's (1983) barriers to Hispanics and other minorities' mental health care is rooted in development of new psycometric instruments, of which TEMAS is an encouraging example (Malgady, Costantino, and Rogler, 1984).

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